

## BOOK REVIEWS

Larsson, Sven Gisle. 1978. Baltic Amber - a Palaeobiological Study. Entomograph, vol. 1, 192 pp., 62 text-figures, 12 monochrome plates. Scandinavian Science Press Ltd., Klampenborg, Denmark. Price: 120 Danish Kroner, \$25.32 Canadian.

One of the reasons that man is so attracted by amber is because it is the earth's most stable and therefore oldest natural biological product. As ambers go, European or Baltic amber, the subject of Larsson's study, is relatively young (35–40 m. yrs. as opposed to 75–80 m. yrs. for Canadian amber). Nevertheless it has been lying around the shores of the present Baltic Sea at least 15 times longer than the fossils of the earliest known man in Kenya, and it is still very much the same as it was when it was first produced by the extinct pine, *Pinites succinitera* Conwentz.

Larsson's attractive book is the first English-language synthesis of biological information on Baltic amber. It is also the first volume in the Scandinavian Science Press new series, Entomograph, designed especially for large important entomological papers such as this. This study builds upon, and in some respects supersedes, Kjell Ander's (1942), *Die Insekten Fauna des Baltischen Bernsteins nebst damit Verknüpften Zoogeographischen Problemen*, and Andolph Bachofen-Echt's (1949), *Der Bernstein und sein Einschlüsse*.

The author's theme (p. 7) is the rich content of fossils of terrestrial arthropods and plants that are contained in Baltic amber, and the excellent opportunities these fossils provide for learning the early history of plant and animal life. Although not stated, the main purpose of the book appears to be to outline the problems involved in interpreting the amber biota. It is also apparent throughout the book that a secondary purpose is to publicize the relatively large, newly amassed collection of Baltic amber (8000 specimens), derived almost exclusively from Danish coasts, in the Zoological Museum, Copenhagen.

The book brings to fruition Larsson's long standing interests in Baltic amber, and culminates his efforts since 1949 to develop a permanent working collection of scientific specimens from Denmark. Being a Dane, he is thoroughly familiar with the geography of the parts of Europe where the amber was produced and deposited, and he brings first-hand knowledge to bear on those problems. He is a professional entomologist with close contacts with many other entomological specialists in the Zoological Museum, and this is another essential qualification for fulfillment of his purposes. In developing the geological and chemical framework provided for his presentation he was guided by Danish experts in these fields. So the book has a solid foundation.

Larsson treated the subject in five main sections. Section 1 deals with the general characteristics of amber and resin, its stability and production and its chemical and physical properties. Section 2 is a treatise on the origins of the various ambers from the Baltic region. Section 3 treats the original flora of the amber territory. These three sections occupy 59 pages. Section 4 deals with the original fauna of the amber territory. This, of course, makes up most of the book (116 pp.), and because of the great predominance of insects in the Baltic amber inclusions, the book is primarily an entomological work. The section is divided along ecological lines into seven chapters entitled Plant Sucking Insects, Leaf-and Seed-Consumers, Gall Producers, Nectar

Seekers, Insects Trapped While Resting, The Fauna of Moss and Bark, and The Hidden Fauna of Tree Trunks. The final section (Section 5) is a review describing the nature and conditions of the original amber forest as envisaged by the author. It also includes a list of the amber material in the Zoological Museum, Copenhagen. Each section has its own separate list of references (645 in all). An index restricted to the scientific names of genera and higher taxonomic categories is provided. The book contains 12 plates of original halftone photographs of inclusions (mostly insects) in amber and 62 line drawings, almost all of which are copied from the literature.

The author succeeds to some degree in restating most of the age-old problems involved in the study of the flora and fauna of Baltic amber, but few new facts or ideas are introduced. The book has real value as a reference text and it is very useful as a starting point for finding basic information on many aspects of amber and its inclusions. On the other hand, it has some weaknesses and faults, and it should not be accepted as 'the last word' on the subject. Coverage of the literature is incomplete. Different ideas and interpretations are frequently presented in such a way that the reader is left uncertain as to which he favors. For example, I am still not very confident about the biological status of *Pinites succinifera* or the extent of its role in the production of Baltic amber. Much of the discussion on the age, geographical origin and host origin of Baltic amber from different parts of Europe is in the realm of speculation and the reader ends up with a feeling of uncertainty and confusion on many points. What is said in one place is sometimes contradicted in another. For example, it is stated on p. 103 that the only calyprate fly known from amber belongs to Fabricius' old and well known species, *Fannia scalaris*, and on p. 108 attention is drawn to the fact that one of the amber fossils of Cicindellidae is identical with the recent species *Tetracha carolina* (L.). However, the final sentence of the Review reads "But the original Baltic amber fauna appears to be totally extinct."

The decision to divide the main section on the fauna of Baltic amber into seven chapters based on ecological considerations rather than on systematic grounds was unfortunate. This has led to a considerable amount of overlap and repetition, and it has created difficulty in locating certain data. For example, anyone seeking information on specific groups such as Coleoptera or Diptera must search through seven chapters. It would be better if all the arthropods were treated in a standard systematic sequence, and the ecological correlation were presented in tabular form. Similarly, the decision to break the bibliography into four sections was not a good one. In such a small book it would be preferable to consolidate all the references in one composite list. As it is, the reader must scan four lists if he wishes to locate all the papers cited for any given author, and of course there is a considerable amount of duplication in the different lists. The literary quality would have been improved by a good editing, but the book itself is very well produced. The paper, the printing, and the binding are excellent.

In spite of its shortcomings it is the best single synthesis of paleobiological information available on Baltic amber, and anyone interested in the subject should have a copy.

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